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Industrial Distribution

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Januai

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Distributors
trim plans pending
tax amendments

Preview:
SIDA Annual Convention

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1987

The Future: Profit & Potential

CUTTING TOOLS & ABRASIVES
Showcase
(pull-out section)

ID 75 Industrial Distribution

VOL. 76, NO. 1/76th yr. A CAHNERS PUBLISHING PUBLICATION JANUARY 1987

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Postmaster: Send address changes to Industrial Distribution, Circulation Dept., P.O. Box 1063, Barrington, IL 60010

Microfilm or reproductions of issues or articles are available. Write Xerox University Microfilms, Ann Arbor, MI 48106.

Indicators...

Indicators for September 1986 from three key trade associations reveal a lackluster performance following August figures. The NIDA/SIDA *Industrial Distribution Index* for the month of September showed faint signs of weariness as it fell 2.5 points nationally to a level of 144.4. A year earlier for that same period, the index stood at 146.5. The only region showing positive movement in August-to-September activity, was the West at 166.7, advancing 2.5 points ahead of August (164.2), but overall down 2.5 from the September '85 level of 169.4. The most lackluster performance was registered by the East (132.3), down 7.8 points in its month-to-month activity, and 2.8 points off its year earlier figure of 135.1 ...The September NIDA/SIDA *Industrial Supply Inflation Index* (1977 = 100) registered an increase of only 0.1%, advancing to 165.1 from 165.0 a month ago. A year ago the index stood at 163.4, a rise of 1.0%...SIDA's *Monthly Sales Trend Report* for the month of September inched up by 1.04, 6.31 higher than 1985 levels. However, in 1986/1985 Year-to-Date figures, the Association reported that the index fell by 1.03. Area I (NC, VA, WV) advanced by 4.46 in sharp contrast to the oil-belt states of Area IV (AR, LA, OK, TX) which dropped 6.3 points. Of the 79 national locations reporting sales figures to NIDA for the month of September, 41 indicated that sales had increased over the same time last year...The ASMMA *Monthly Index of New Orders* also showed signs of improvement during the month of September, moving to a level of 120.0, an increase of 1.9 points, or 1.6% ahead of August figures. The index now stands at 123.6, 3.5 points ahead of February's high of 120.1, and 7.2 points ahead of March's low of 116.4

$2-4 million; and 10 had sales of over $4 million.

By contrast, the 13 distributors in the South Central states reported four under $1 million; none between $1-2 million; two between $2-4 million; and six had sales of over $4 million.

Sales—Sales in 1985 are estimated to be running about 10% ahead of the previous year-end-results. STAFDA distributors are also keeping with the national trend towards specialization, reporting a drop in active accounts from 800 in 1985 to 700 in 1986.

The survey also found that the typical member firm had approximately $2.4 million in sales in 1985.

Sales force—The outside sales force

Craig Hanson, Vice President, The C.H. Hanson Company

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BUSINESS REPORT

Smokestack decline continues

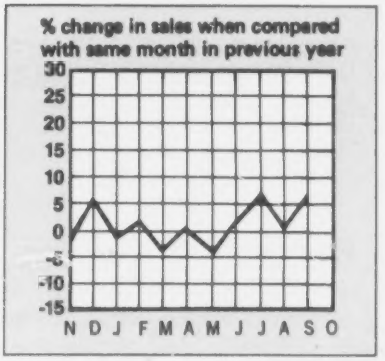
The painful process of adapting to industrial change which has been well underway in Chicago, Detroit, Cleveland and Buffalo is now taking place in some of the Middle Atlantic states.

In Erie, PA and the surrounding area, for example, tool and abrasives specialists report dismal business conditions due to the continuing decline of the steel industry, and the consequent decline of subcontractors engaged in metal cutting and fabricating. Rather than enter new markets such as contractors tools and equipment which has picked up with the construction industry boom, distributors are trying to gain new business in their specialty by increasing the territority they cover. Says one distributor: "By the time we learn how to compete with distributors servicing the construction market, the boom there could very well be over. Many of us feel its better to stick with what we know and just sell harder and hope that business will eventually pick up."

In New Jersey, power transmission distributors who lost business when the textile industry went south, and found marine business off earlier this year with the sharp drop in oil tanker deliveries, are now concerned with new pollution regulations affecting the many chemical plants in the state. In addition to EPA (Environmental Protection Agency) on the Federal level, the state has DEP (Dept. of Environmental Protection), and is advocating strict enforcement of rules. Several chemical companies have already combined operations with plants in the south, or shifted future business elsewhere, cutting back its New Jersey operations. Few distributors selling to this market are optimistic about 1987, and fear what may be ahead for the long term.

Nationally, sales gains were still positive in October, up a thin 1%. However, month-to-month statistics, up 6%, indicate a favorable trend. Receivables continue to stay at the best levels of the year, with further improvement possible as the business philosophy of "low-inflation, low-debt" takes hold.

—Milt Ellenbogen



RECEIVABLES*

	Oct. '86 Gen.	Oct. '86 Spec	vs. Oct. '85 Gen.	Oct. '85 Spec.
New England	41	47	41	48
Middle Atlantic	40	41	41	40
South Atlantic	36	40	34	40
East No. Central	38	36	40	38
East So. Central	—	32	—	32
West No. Central	40	37	39	38
West So. Central	36	37	44	36
Mountain	32	37	39	42
Pacific	43	43	41	43
National	38	39	40	40

* Average days outstanding

SALES BY REGIONS (% change)	Oct.'86 vs. Sep.'86 Gen.	Spec.	Both	Oct.'86 vs. Oct.'85 Gen.	Spec.	Both	1st ten months '86 vs. 1st ten months'85 Gen.	Spec.	Both
NEW ENGLAND: CT, RI, MA, NH, VT, ME	+21	+14	+18	0	+14	+6	−7	+2	−5
Connecticut	—	+8	—	—	+21	—	—	+2	—
Massachusetts	+3	—	—	−8	—	—	−1	—	—
MIDDLE ATLANTIC: NY, NJ, PA	+18	+13	+14	−1	0	0	−3	−1	−2
New York Metropolitan Area	—	+16	—	—	+1	—	—	−2	—
Upstate New York	+23	−12	+4	+3	−6	−2	−6	−2	−4
Pennsylvania	+21	+22	+22	−7	+1	−1	0	0	0
SOUTH ATLANTIC:DE, DC, MD, FL, GA, NC, SC, VA, WV	+14	−2	+5	−1	−3	−2	−1	−1	−1
Georgia-Florida	+17	0	+3	+10	−3	+1	+1	−4	−3
EAST NORTH-CENTRAL: OH, IN, IL, MI, WI	+7	−1	+3	+1	−2	−1	0	+6	+3
Indiana	+5	—	—	+13	—	—	+9	—	—
Wisconsin	+21	—	—	+26	—	—	+15	—	—
Chicago	—	—	—	—	—	—	—	—	—
Michigan	+2	−2	0	+1	+20	+12	+4	+4	+4
Ohio	+9	−3	+3	−13	−9	−11	−10	+3	−4
EAST SOUTH CENTRAL:AL,MS, KY, TN	—	+8	—	—	+3	—	—	+1	—
WEST NORTH CENTRAL: MN, ND, SD, IA, NE, KS, MO	+12	+6	+10	+26	+4	+21	−3	−1	−3
WEST SOUTH CENTRAL: AK, LA,OK, TX	+14	−6	+3	+4	−1	+1	+6	+1	+3
Texas	—	−6	—	—	−1	—	—	+1	—
MOUNTAIN: NM, AZ, CO, UT, NV, WY, MT, ID	+16	+19	+17	+5	+5	+5	+3	+4	+3
PACIFIC: CA, OR, WA	+4	−9	−2	−3	−8	−5	−1	−1	−1
L.A.-San Diego	—	—	—	—	—	—	—	—	—
Oregon-Washington	+7	−5	+2	+2	−2	0	+7	+3	+5
U.S. TOTALS	+11	−2	+6	+3	−1	+1	−1	+1	0

2000 1990 1987

At no other time in recent history have so many imponderables obscured the future. Still, experts are predicting a spotty but generally stronger new year extending into 1988. Reasons: new products and changing markets with new and greater needs.

The stage is set for an economic boom," enthused one well-known economist. "The short term future is decidedly bleak," lamented another.

Why the confusion? Because as we go to press, the year 1987 appears to many observers to be "a riddle wrapped in a mystery inside an enigma." Business, Government and the economy are confronting a rare combination of positive and negative forces whose bottom-line effect on industrial distribution can only be surmised.

Item: The Reagan administration, generally considered to be "pro-business" lost control of the Senate in last November's elections and with it, many key Senate committee chairmanships. The impact upon administration-backed legislation affecting business at the distributor's level now that Democrats control both the House of Representatives and the Senate by substantial majorities, is unclear.

Item: The *Tax Reform Act of 1986* is conceded to be the most significant and far-reaching tax legislation passed in the last 40 years. According to Roscoe L. Egger, Jr., commissioner of the IRS from 1981 to 1986, the new tax legislation "will have a considerable effect on every individual and business in this country for many years to come." What that effect will be on small businesses serving industrial markets, however, will only become apparent with time. (See *Hotline*, pg. 54)

Item: Despite the recent drop in the value of the dollar compared to other key currencies, imports of distributor-sold and capital goods, among others still flood the U.S. and negatively effect such traditional distributor customers as steel, agriculture and oil production. Although foreign trade deficits have shown some recent improvement, experts are divided on whether deficit reduction is a continuing trend or whether the deficit will resume its ascent in the coming year.

Item: The sale of arms to Iran and the funneling of the proceeds to the Nicaraguan *Contras*, have put the White House and key staff members on the defensive. In the view of many observers, the resulting furor may cripple President Reagan's effectiveness for the remainder of his term in office, make the election of a Democratic president in 1988 more likely, and restrain Congressional approval of future defense spending, an eventuality which would affect distributors and other sources of defense amd defense support MRO.

By **Milt Ellenbogen**
Managing editor
and **Doug Harper**
Senior editor

A probable recession ?

In its latest *Industry Forecast*, Levy Economic Forecasts, Chappaqua, NY, says that a recession in 1987 is "probable," noting that "historical data reveal what common sense suggests: consumers cannot sustain a binge for extended periods."

Among the points made in its gloomy prognosis, Levy says that although the new tax laws will play only a small role in determining the economy's rate of growth—or contraction—in 1987, the new law will impact negatively upon construction.

"A recession may be avoided," says Levy Economic Forecasts, president S. Jay Levy, "but only in the unlikely event that a vast, timely improvement in the balance of trade occurs and consumers manage to keep spending briskly while meeting their mounting, massive financial obligations."

On the more optimistic side, Dr. Michael K. Evans, president of Evans Economics, Inc., Falls Church, VA, comments that "We think 1987 will feature stronger growth, little inventory buildup and fewer fluctuations." (See Chart 1).

Among the factors cited by Evans for his rosy view are:

- Recent stastistics indicating that the corner has been turned and some modest improvement can be expected for 1987.
- The plunge in capital spending earlier this year due to the retroactive cancellation of the investment tax credit, plus the 50% reduction in oil prices and the lengthening of depreciation lives for structures are all behind us. Capital spending in 1987 should increase 3-4%.
- The auto industry appears to be proceeding more sensibly in 1987. GM plans to cut production in the first quarter by 9% and the other manufacturers are following suit. Although auto sales may decline from 11 million to 10.5 million units in 1987, the car companies should make more

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The future: Profit and potential

money as a result of more realistic financing rates.

Real income in 1987

Dr. Robert J. Barbera, E.F. Hutton's chief economist also pays homage to an economy driven by consumer spending. "We expect adequate gains in real income throughout 1987 which will bankroll unexciting but acceptable advances in inflation-adjusted consumer spending," stresses Barbera.

Barbera predicts a 6% growth in nominal personal income in 1987 with wages growing no more than 4%. He also expects employment growth to accelerate although he sees only a modest increase in service employment. "For 1987 we see a marked decline in construction employment gains and a return to the plus column for manufacturing employment and the end of the steep slide for the petroleum industry which will, we believe, result in better employment gains in that industry next year."

"We need a crystal ball"

Reflecting the pervasive uncertainty surrounding 1987, Richard Byrne, executive director of the Tarrytown, NY-headquartered Hand Tools Institute says that in his estimation, the hand tool business could go almost anywhere this year.

"If I had a crystal ball and if I knew what the economy was going to do, I could probably give you some interesting speculation but what most people don't seem to have a good handle on is how much of the industrial base of this country has moved offshore. Even if the economy does strengthen, the question will be whether the product mix in the industrial market has been switched around or whether the market has been permanently reduced. And this is the question that everyone is trying to figure out: whether or not we're in a negative growth market."

The market for hand tools is "the $64 question" says Byrne, adding that there may be a new customer base in the industrial market. "Maybe the future lies with computer and high-tech oriented or pharmaceutical and chemical companies which have recently experienced tremendous growth. But we have seen fall-off in agriculture and the energy fields and whether these other markets will pick up enough steam to compensate for that is the big question and we simply don't know."

Because of its close connection with the construction industry, the National Assn. of Electrical Distributors headquartered in Norwalk, CT, serves as a barometer for this vital segment of the economy.

According to its president, Marvin V. Schylling, 1986 business for electrical distributors grew by 2-2.5% and the associaton expects 1987 to be very close to those numbers. "And that ties in with what electrical manufacturers and electrical contractors are saying," he reports.

In terms of market strength, Schylling notes that residential and commercial contracting should account for the greatest growth in 1987, with industrial construction second and utilities third.

Geographically, Schylling says that the northeast is "head and shoulders over all of the other areas with the exception of central U.S. which has been hanging in there." He expects the trend to continue into 1987. Surprisingly, Schylling says that he does not forsee great strength on the west coast or in the south in the immediate future where growth has trailed far behind other sections of the country.

Looking ahead to 1988, Schylling sees that year as "not quite as good as 1987 but we think that it should be very, very close."

Management-driven success

The American Machine Tool Distributors' Assn. located in Bethesda, MD, is an organization directly affected by the exigencies of the industrial marketplace. Robert A. Gale, its executive director says that the association expects to see machine tool orders in 1987 roughly maintaining their 1986 levels in real terms.

"We may see slight improvements," Gale concedes, "and margins on machine tools will be greater because of the voluntary restraints that are going to kick in and impact the price of machine tools."

Gale says that market segmentation for machine tools in 1987 is particularly cloudy. "We can't pinpoint any specific industry and we don't think it will be any particular industry," he notes. "We feel that success will more be driven by the company's management than it will by the industry they're in, on an individual basis. We've seen it this year and there doesn't seem to be any one industry or any one geographic area that's causing it. It just seems to be that finally someone decided they had to buy a more productive or more automated machine tool, primarily to compete with imports. So it could be automobile

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The future: Profit and potential

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Estimates for 1986 to 1991, indicate total shipments for the components product group (see Table 1) will increase an average annual rate of 2%, compared with a 5.7% increase projected for all fabricated metal products industries.

Shipments of ball and roller bearings dropped about 5% in 1986 (1982 dollars) with the ball bearing sector of the industry accounting for most of the decline. A sharp drop in the oil field machinery market more than offset other sales increases in aircraft manufacturing and mining machinery.

Although imports should increase 6% in 1987, U.S. bearings manufacturers will derive indirect benefits as sourcing of capital equipment shifts to U.S. manufacturers and away from overseas suppliers. For the long term, annual growth in industry shipments of bearings will range from 1% to 2% through 1991. Focus will be on specialty bearing markets.

Shipments of valves and pipefittings also declined in 1986, about 0.2%, after rising the two previous years. Increases occurred in shipments to manufacturers of food processing and chemicals processing machinery and also to the water and sewage construction area. On the downswing were petroleum production and the paper machinery industries. In 1987, shipments of valves and pipefittings are expected to increase 1%, with moderate growth in water and sewage system construction, food processing machinery, and chemical output.

Despite problems in the above categories, selective industries will still manage to prosper.

One industry that seems to be recovering from the onslaught of imports is industrial fasteners (see Table 2). According to Frost & Sullivan, Inc., a New York-based market research firm, consolidation and restructuring by the U.S. fastener industry are succeeding in counteracting the flood of imports that have hit the industry in the past few years.

In their latest fastener study, sales are expected to increase from $3.83 billion in 1984 to $5.13 billion in 1989. The automotive industry will be the largest customer with about $1 billion in purchases, or 24% of the market, aircraft and aerospace next with 14% of total sales, and non-electrical machinery third at 11%. Bolts should account for the largest share of sales, with internally threaded fasteners and non-threaded and specialty fasteners doing relatively poorly, averaging only 3.5% annual growth. Part of the reason for declining sales is the growing use of adhesives to eliminate nuts, indicated in the figures projecting growth of specialty adhesives.

Specialty adhesive sales (see Table 3) has now hit $2.1 billion annually, according to another Frost & Sullivan study. Presenting an opportunity for distributors is the near-8% annual growth rate expected in the construction industry on up to 1990, when overall sales should hit $2.8 billion.

With construction machinery use on the rise, and the automotive market steady, sales of hydraulic fluid power products should continue to prosper. According to Business Trend Analysts, a Long Island (NY)-based market research firm, the entire industry will be healthy (see Table 4).

A major reason for continued strength in this industry is introduction to heavy construction machinery of high-tech- which includes combining electronics with advanced fluid and mechanical power actuation for quick response, higher operating efficiencies and diagnostic capabilities. This has led to new designs of valves and pumps for a host of markets.

Selected bellwether market projections

Table 1—Value of shipments by components industries

($ millions 1982 dollars)

Item	1984	1985	1986	1987	Percent change 1985-86	1986-87
Screw machine prods	2,844	2,730	2,664	2,653	-2.4	-0.4
Industrial fasteners	4,499	4,364	4,259	4,250	-2.4	-0.2
Valves & pipefittings	8,715	8,924	8,906	8,986	-0.2	0.9
Ball & roller bearings	3,658	3,510	3,345	3,378	-4.7	1.0
Total	19,716	19,528	19,174	19,267	-1.8	0.5

Est. by International Trade Administration (ITA)
U.S. Department of Commerce
Source: U.S. Department of Commerce (ITA)

Table 2—Estimated fastener consumption 1985-1989

($ millions)

	1984	1985	1986	1987	1988	1989	%
Bolts	729	841	880	1013	1052	1069	8.0
Large screws	599	655	739	752	752	776	5.3
Small screws	640	697	787	797	821	838	5.5
Nuts	487	530	601	583	579	579	3.5
Non-threaded	630	667	697	722	754	756	3.7
Aircraft/aerospace	524	594	701	748	788	850	10.2
Specialty & other	225	197	227	256	257	265	3.3
Total consumption	3835	4181	4682	4871	5003	5136	6.0

Source: Frost & Sullivan Estimates.

Table 3—Sales of adhesives to the construction industry by type ($ millions)

Type	1985	1990	Annual growth (%)
Pressure-sensitive	120	160	5.9
Polyvinyl acetate	69	88	5.0
Polyurethanes	50	85	11.3
Epoxies	40	68	11.2
Other	34	55	10.1
Total	$313	$456	7.8%

Source: Frost & Sullivan, Inc.

Table 4—Domestic manufacturers' sales of hydraulic fluid power products($ millions)

Year	Total hydrl fluid power equipment	Hydrl pumps & motors	Hydrl valves	Hydrl hose assemblies	hydrl hose
1980	$3,537.5	$666.5	$626.8	$883.6	$250.9
1981	3,631.8	776.2	678.1	762.5	255.7
1982	3,354.3	583.2	609.1	737.3	196.0
1983	3,291.7	558.8	568.9	776.4	218.9
1984E	4,014.4	692.6	700.0	940.0	260.7
1985E	4,423.2	774.9	796.7	1,029.3	280.6
1994P	8,436.4	1,390.2	1,460.1	2,057.9	565.3

E- Estimate by Business trend Analysts
P- Projection by Business Trend Analysts

Table 5—Manufacturers' sales of automated storage and retrieval systems
($ millions)

Year	Manufacturers' sales of AS/RS systems	Average % change
1983	185.0	5.2%*
1984	211.0	14.1
1985E	253.0	19.9
1994P	1,080.9	17.5*

E - Estimate by Business Trend Analysts
P - Projection by Business Trend Analysts
*Average annual growth rate

Source: Business Trend Analysts

Table 6—Value of maufacturers' sales of hoists, cranes and monorails ($ millions)

	Hoists (parts & attachments, mobile & stationary	Overhead traveling cranes & monorail systems	Hoists,cranes monorails & parts
1980	715.4	624.1	56.3
1981	716.8	623 9	62.5
1982	409.5	562.6	91.8
1983	325.6	425.9	83.6
1984	411.2	543.9	62.1
1985E	468.8	631.5	74.6
1994P	952.9	1,320.9	154.2

E - Estimate by Business Trend Analysts
P - Projection by Business Trend Analysts

Source: U.S. Department of Commerce

Table 7—Mechanical power-transmisson components - belt drive products ($ millions)

	1984	1985	1986	1987	1988	1989
V-belts	190.0	205.2	225.7	228.0	250.8	268.3
Timing belts:						
Trapezoidal	23.0	24.8	27.3	27.6	30.4	32.5
High-performance	12.0	14.2	17.0	18.9	22.6	26.5
Flat belts	12.0	13.0	14.3	14.4	15.8	16.9
Sheaves	110.0	118.8	130.7	132.0	145.2	155.3
Total	347.0	376.0	415.0	420.9	464.8	499.5

Source: Frost & Sullivan

Table 8—Mechanical power-transmission components --ball bearings ($ millions)

	1984	1985	1986	1987	1988	1989
Mounted	160.0	176.0	197.1	203.0	227.4	247.9
Precision	125.0	141.3	162.4	172.2	198.0	221.8
Other	1115.0	1204.2	1324.6	1337.9	1471.7	1574.7
Total	1400.0	1521.5	1684.1	1713.1	1897.1	2044.4

Source: Frost & Sullivan

Between 1984 and 1994, it is estimated that domestic manufacturers' sales of hydraulic equipment will grow at a compounded annual rate of 7.8% to bring sales to $8.84 billion, an average annual increase of 3% per year. Major markets are non-electrical machinery and transportation equipment.

The fastest growing area within the hydraulic industry over the next ten years will be hydraulic hose assemblies as well as hydraulic hose. The average annual rate of growth is expected to be 8.2% and 8.1% respectively.

Prospects are excellent for the material handling equipment industry (see Table 5), even though American manufacturing has been slow to automate and spend substantial sums for factory improvements. The reason: almost every new factory built or planned includes modern, computer controlled, automated material handling systems. Automated storage and retrieval systems are proven labor savers and reliability is no longer a question. Other systems included in the mix are automatic guided vehicle systems, remotely controlled, which run along a guide-wire path imbedded in the floor of the automated environment, and computer controlled system networks which integrate and coordinate the systems.

With the turnaround in the industrial economy in late 1983, sales of hoists rose substantially (see Table 6). From 1982 to 1984, total industrial production rose 8.5% per year, and mining production rose 7.8% alone in 1984.

Included in the hoist category of products are hand hoists, electric chain and wire rope hoists, mining hoists, air chain and wire rope hoists, and special or specific-use type hoists. Of the group, electric hoists have had the highest growth rate (6% per year since 1982) followed by electric wire rope hoists (5.7% per year since 1977). Projections, according to Business Trend Analysts, are healthy for hoist sales with increases expected at an annual rate of 8.2% between now and 1994, with 1994 sales estimated at $952.9 million.

Overhead traveling cranes, especially stacker cranes, single mast and bridge-type cranes are expected to do very well in the next several years because of their adaptability to automation. Monorail systems, necessary to integrate automatic work environments, should also be healthy.

Sales of mechanical power transmission components will vary (see Figures 7 and 8). Little growth is expected in sales of V-belts, trapezoidal timing belts, flat power-transmission belts, sheaves, and other belt drive products, as well as elastomeric couplings, electric brakes, air-operated brakes, ball bearings (except precision and mounted) and roller bearings, except mounted. (See Figure 8.)

The future: greater selectivity

It appears from this historical data and estimated projections, that barring a serious decline in the national economy in 1987 or the immediate future, selected industries will do well, others will be flat, and some will barely survive. Distributors, being mainly concerned with regional economics, will have to follow the larger industrial picture to gage the effect locally and, as in the past, try to make the right decisions based on national trends for the industries they serve.

Although projected growth may be slow, the direction is still up according to most distributor-consultants and economists, who agree on at least one thing: this is no time to cut back or hold minimum inventory. The marketplace is full of surprises, and 1987 should contain its share.□

1987: A better year

For cutting tool and abrasives manufacturers, 1987 is increasingly being viewed as a watershed year. The general consensus suggests that conditions have not been as favorable for basic recovery in several years.

As evidence they cite:

- In 1987 the U.S. dollar should be moving into its third year of a drop in value that started in early 1985 against other major currencies. *Significance: Domestic cutting tools and abrasives will vie on an equal footing in U.S. markets.*
- While controversial, the new tax bill which began to take effect on January 1, does reduce the top corporate tax rate from 46% down to 34%. *Significance: more plant modernization, more advanced productivity enhancing plant equipment, more sales potential for common and advanced distributor-sold products.*
- Voluntary retraints by Japan, Taiwan, Switzerland and West Germany limiting exports of machine tools went into effect the first of the year. *Significance: more sales opportunities for new and traditional products made and designed around U.S. standards.*
- American manufacturers have made significant improvements in productivity that have, in many cases, eliminated the cost advantage of offshore producers. Companies are beginning to bring their manufacturing operations back to the U.S. *Significance: expanding domestic markets, more sales opportunities for distributors.*
- Foreign producers', most notably Japan's, labor rates are inching upward at the same time that their currency is growing stronger against the dollar. *Significance: neutralized prices, less price competition, greater focus on quality and service over cost per item.*

Shipments of Machine Tools to Date
(Millions of Dollars)

Year	Metal Cutting		
	Total	Domestic	Foreign
1970	993	827	166
1971	672	554	118
1972	714	627	87
1973	1074	935	139
1974	1445	1241	205
1975	1879	1548	331
1976	1482	1270	212
1977	1651	1470	181
1978	2189	1960	228
1979	2930	2605	325
1980	3681	3206	475
1981	4105	3553	552
1982	2895	2599	296
1983	1372	1200	172
1984	1607	1484	123
1985	1742	1549	194
1986 (e)	1850	1650	200
1987 (e)	1665	1485	180

Source: National Machine Tool Builders Assn.

Quality and service

According to *one* industry forecast, supply and pricing of bonded and coated abrasives products will not change dramatically from 1985-1986 levels. "Unit sales for the U.S. abrasives products will remain flat," it concludes.

This year is also expected to see increased market pressure on abrasives manufacturers to improve quality and service and deliver on shorter lead times which will increase the importance of the distributor to both the abrasives manufacturer and consumer. Efforts to implement electronic communication between manufacturer-distributor-consumer are expected to grow in 1987.

Seen as promising areas of application for bonded abrasives in the next year are: the aviation industry for aircraft engine turbines, the casting and foundry industry, railroad maintenance, engineering and construction, and pieces of the auto industry including fuel injection and front-wheel drive, although overall, auto sales will be weak. The major application seen for coated abrasives in 1987 is furniture production and other woodworking followed closely by roughing and finishing in metalworking operations.

Guarded optimism

While the machine tool industry is relatively small—if the industry's 1400 U.S. companies were combined into one firm–it would rank 151st in the *Fortune 500*—its performance serves as a bellwether economic indicator for durable goods which include fabricated nearly every item in the distributor's catalog.

According to the *1986-1987 Economic Handbook of the Machine Tool Industry*, published annually by National Machine Tool Builders' Assn., the dramatic swings in the value of shipments and orders (see table) tend to obscure significant changes in the product mix of the equipment being sold.

One of the more significant changes that emerge from the statistics is the increase in installation of "station type" and "multi-function numerically controlled" (machining center) machines. They have doubled their share of the market from 15-20% in the late 1950's to more than 40% in recent years. Paralleling their growth is a continuous stream of off-the-shelf improvements for the new machinery's tool and workholding requirements and higher standards of precision and output.

State-of-the-art station-type dedicated machines are designed to produce parts in previously unheard of volumes, uniformity and precision per shift. Also part of the space-age machine spectrum are the advanced numerically controlled machining centers which represent the extreme in flexibility. By virtue of their tool changing capability and control—in which a *program* maintains the production process rather than manual control—these machines can be reprogrammed for other work.

Advances like these will continue to challenge the distributor's ability to adapt to change and serve the market.□